WHAT IS CLAIMED IS:

1. An ultrafine copper alloy wire with a diameter of not more than 0.08 mm,

said ultrafine copper alloy wire being formed of a copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass.

2. An ultrafine copper alloy wire with a diameter of not more than 0.08 mm,

said ultrafine copper alloy wire being formed of a copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.5% by mass of magnesium having a purity of not less than 99.9% by mass.

3. An ultrafine copper alloy wire with a diameter of not more than 0.08 mm,

said ultrafine copper alloy wire being formed of a copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.3% by mass of indium having a purity of not less than 99.99% by mass.

4. The ultrafine copper alloy wire according to claim 1,

~~2, or 3~~, wherein said copper alloy wire has thereon a tin plating, a silver plating, a nickel plating, a tin-lead solder plating, a tin-silver plating, a tin-copper plating, a tin-silver-copper plating, or a tin-silver-copper-bismuth plating.

5. A stranded copper alloy wire conductor comprising a plurality of copper alloy wires with a diameter of not more than 0.08 mm stranded together,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass.

6. A stranded copper alloy wire conductor comprising a plurality of copper alloy wires with a diameter of not more than 0.08 mm stranded together,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.5% by mass of magnesium having a purity of not less than 99.9% by mass.

7. A stranded copper alloy wire conductor comprising a plurality of copper alloy wires with a diameter of not more than 0.08 mm stranded together,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by

mass and 0.01 to 0.3% by mass of indium having a purity of not less than 99.99% by mass.

8. An extrafine coaxial cable comprising a copper alloy wire with a diameter of not more than 0.08 mm provided for constituting an inner conductor or an outer conductor,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass.

9. An extrafine coaxial cable comprising a copper alloy wire with a diameter of not more than 0.08 mm provided for constituting an inner conductor or an outer conductor,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.5% by mass of magnesium having a purity of not less than 99.9% by mass.

10. An extrafine coaxial cable comprising a copper alloy wire with a diameter of not more than 0.08 mm provided for constituting an inner conductor or an outer conductor,

said copper alloy wire comprising high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass and, added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.3% by mass of indium having a purity of not less than 99.99% by mass.

11. The extrafine coaxial cable according to claim 8, ~~9 or 10,~~ wherein the inner conductor comprises a plurality of the copper alloy wires stranded together.

12. A process for producing an ultrafine copper alloy wire, comprising the steps of:

melting a high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass in a carbon crucible installed in a vacuum;

replacing an atmosphere surrounding the melted copper by an argon gas atmosphere and adding 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass to said copper;

casting said copper with silver added thereto in a carbon mold into a wire rod; and

drawing said wire rod to a diameter of not more than 0.08 mm.

13. A process for producing an ultrafine copper alloy wire, comprising the steps of:

melting a high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass in a carbon crucible installed in a vacuum;

replacing an atmosphere surrounding the melted copper by an argon gas atmosphere and adding, to said copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.5% by mass of magnesium having a purity of not less than 99.9% by mass;

casting said copper with silver and magnesium added thereto in a carbon mold into a wire rod; and

drawing said wire rod to a diameter of not more than 0.08 mm.

14. A process for producing an ultrafine copper alloy wire, comprising the steps of:

melting a high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass in a carbon crucible installed in a vacuum;

replacing an atmosphere surrounding the melted copper by an argon gas atmosphere and adding, to said copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.3% by mass of indium having a purity of not less than 99.99% by mass;

casting said copper with silver and indium added thereto in a carbon mold into a wire rod; and

drawing said wire rod to a diameter of not more than 0.08 mm.